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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/979,511

11/16/2001

Nicolae Moldoveanu

34.0031 PCT US

6047

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02/13/2003

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EXAMINER

LE, TOAN M

ART UNIT

PAPER NUMBER

2862

DATE MAILED: 02/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/979,511

Applicant(s)

MOLDOVEANU, NICOLAE

Examiner

Toan M Le

Art Unit

2862

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claims 4-6 and 8-9 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim.

See MPEP § 608.01(n).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claim 5, in lines 1-2, “wherein seismic data is inverted using theoretical or optimal seismic source output”, it is not clear how the seismic data is inverted using theoretical or optimal seismic source output.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2862

Claims 1-4 and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Landrum, Jr..

Referring to claim 1, Landrum, Jr. discloses a method of seismic surveying using a plurality of vibratory seismic sources, the method including the steps of: deploying at least one seismic sensor; deploying a plurality of vibratory seismic sources at different source points; simultaneously actuating the seismic sources; acquiring seismic data attributable to the seismic sources using the seismic sensor; redeploying the seismic sources so that at least one of them is positioned at a source point previously occupied by another of them; simultaneously actuating the redeployed seismic sources; acquiring seismic data attributable to the redeployed seismic sources using the seismic sensor; decomposing the acquired seismic data into components attributable to each seismic source; and stacking together components attributable to seismic sources located at a common source point (col. 5, lines 45-65; and col. 8, lines 47-67; figures 1 and 3).

As to claim 2, Landrum, Jr. discloses a method of seismic surveying using a plurality of vibratory seismic sources, wherein the simultaneously actuating steps each comprise simultaneously actuating each seismic source M times at each source point, where M is not less than the number of seismic sources (col. 3, lines 33-36; and col. 6, lines 5-6).

Referring to claim 3, Landrum, Jr. discloses a method of seismic surveying using a plurality of vibratory seismic sources, further including the step of noise attenuating at least one of the components before the components are stacked together (col. 9, lines 8-18).

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As to claim 4, Landrum, Jr. discloses a method of seismic surveying using a plurality of vibratory seismic sources, wherein the respective outputs of the seismic sources are recorded and used in processing the acquired seismic data (figure 3).

Referring to claim 6, Landrum, Jr. discloses a method of seismic surveying using a plurality of vibratory seismic sources, wherein each seismic source is capable of producing seismic energy within a respective frequency range and the frequency range of the seismic energy produced by one seismic source is substantially outside the frequency range of seismic energy produced by another seismic source when the seismic sources are simultaneously actuated (col. 9, lines 1-5).

As to claims 7-8, Landrum, Jr. discloses a method of seismic surveying using a plurality of vibratory seismic sources, wherein the seismic sources have sweep tapers and a sweep taper of one seismic source overlaps a sweep taper of another seismic source and wherein the frequency range of one seismic source has first order harmonics that do not overlap the frequency range of another seismic source (col. 5, lines 14-45).

Referring to claim 9, Landrum, Jr. discloses a method of seismic surveying using a plurality of vibratory seismic sources, wherein the redeploying step comprising shifting the seismic sources one source point in a common direction along a common path (figure 1).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 4,823,326 to Ward

U.S. Patent No. 6,028,818 to Jeffries

Art Unit: 2862

These Patents disclose a method of seismic surveying using a plurality of vibratory seismic sources simultaneously.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan M Le whose telephone number is (703)305-4016. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (703)305-4816. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9318 for regular communications and (703)872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-0956.

Toan Le

February 6, 2003


EDWARD LEFKOWITZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800